# Headquarters U.S. Air Force

*Integrity - Service - Excellence*

# DAU Hot Topic Forum

## Program/Portfolio Management – Enabler for Success

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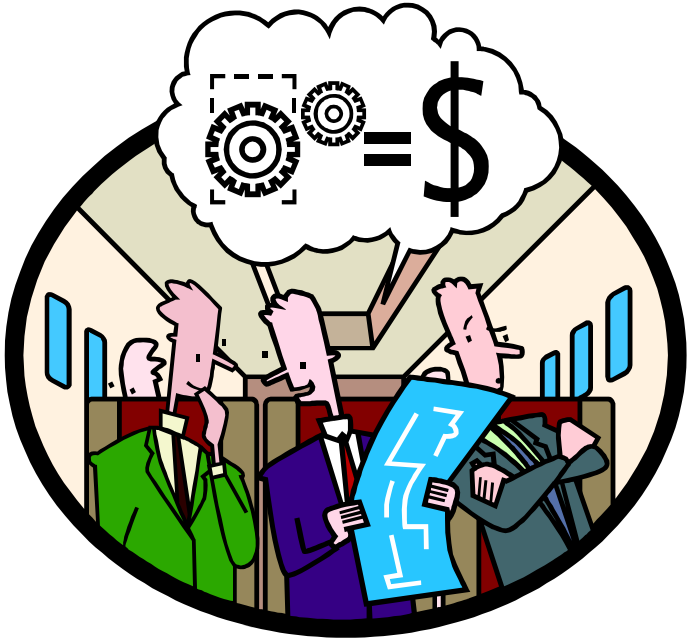
# Overview

- Call for Action
- The Larger Purpose
  - Crucial Elements
- Summary




**Portfolio Management and Risk-Influenced Decision-Making**

# 31 March 2008 Report, GAO Conclusions on DoD Acquisition

Since 2000, the Department of Defense (DOD) has roughly doubled its planned investment in new systems from $790 billion to $1.6 trillion in 2007, ***but acquisition outcomes in terms of cost and schedule have not improved***.

Total acquisition costs for major defense programs in the fiscal year 2007 portfolio have ***increased 26 percent from first estimates***, ***compared with 6 percent in 2000***. Programs have also often failed to deliver capabilities when promised. ***DOD's acquisition outcomes appear increasingly suboptimal***, a condition that needs to be corrected given the pressures faced by the department from other military and major nondiscretionary government demands.

# Analysis of DoD Major Defense Acquisition Program Portfolios

| Fiscal year [FY] 2008 dollars | | | |
|---|---|---|---|
| | FY 2000 Portfolio | FY 2005 Portfolio | FY 2007 |
| **Portfolio** | | | |
| **Portfolio size** | | | |
| Number of programs | 75 | 91 | 95 |
| Total planned commitments | $790 Billion | $1.5 Trillion | $1.6 Trillion |
| Commitments outstanding | $380 Billion | $887 Billion | $858 Billion |
| **Portfolio performance** | | | |
| Change to total RDT&E costs from first estimate | 27 percent | 33 percent | 40 percent |
| Change in total acquisition cost from first estimate | 6 percent | 18 percent | 26 percent |
| Estimated total acquisition cost growth | $42 Billion | $202 Billion | $295 Billion |
| Share of programs with 25 percent or more increase in program acquisition unit cost | 37 percent | 44 percent | 44 percent |
| Average schedule delay in delivering initial capabilities | 16 months | 17 months | 21 months |

Source: GAO analysis of DoD data, 31 Mar 2008 Report

# 31 March 2008 Report, GAO Conclusions on DoD Acquisition

Of the 72 programs GAO assessed this year, ***none*** of them had proceeded through system development meeting the best practices standards for *mature technologies*, *stable design*, or *mature production processes* by critical junctures of the program, each of which are essential for achieving planned cost, schedule, and performance outcomes.

The absence of wide-spread adoption of ***knowledge-based*** acquisition processes by DOD continues to be a major contributor to this lack of maturity.

Aside from these knowledge-based issues, GAO this year gathered data on **four additional factors** that have the potential to influence DOD's ability to manage programs and improve outcomes— *performance requirements changes*, *program manager tenure*, *reliance on nongovernmental personnel to help perform program office roles*, and *software management*.

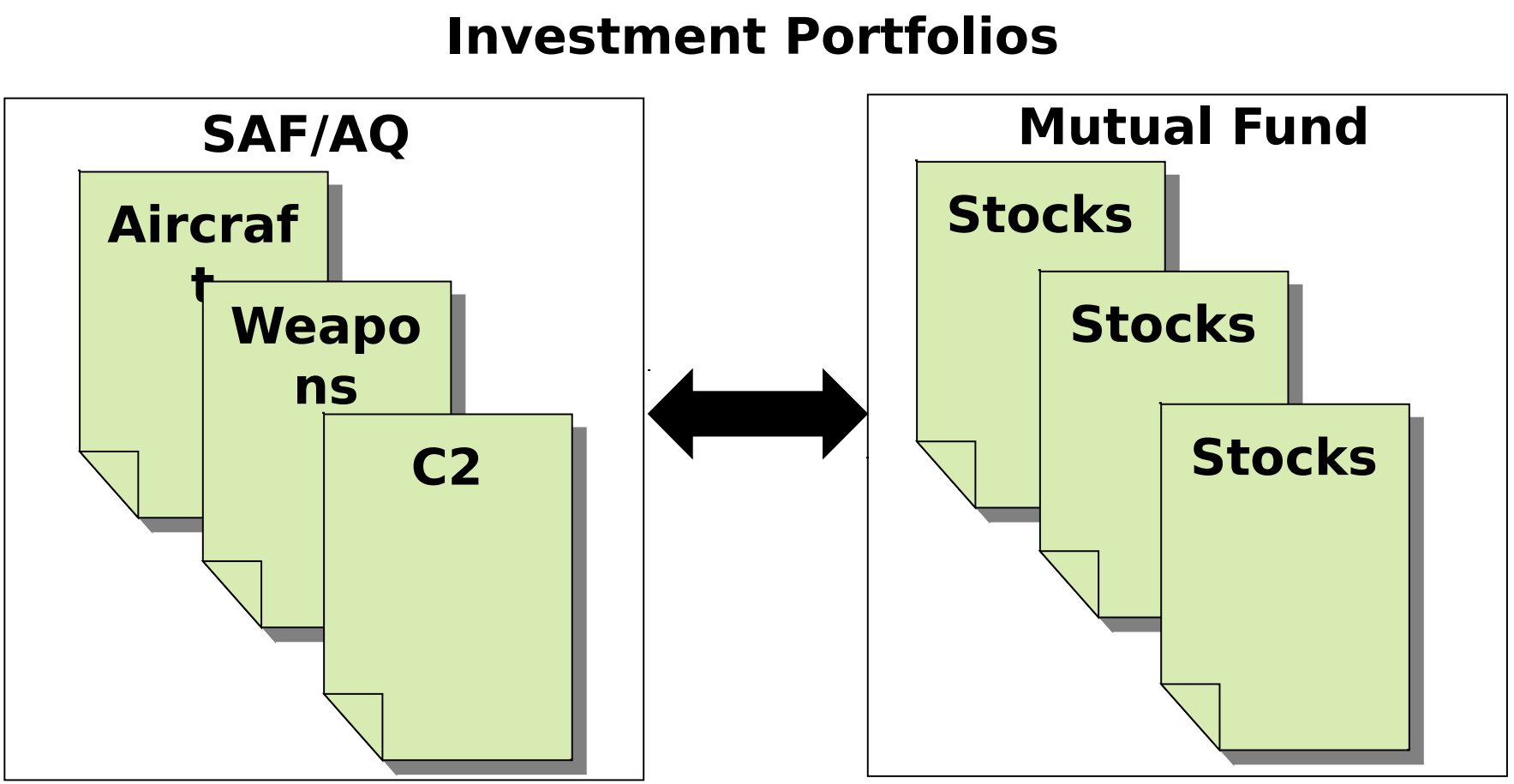
# The Larger Purpose

- **Ends**
  - **Portfolio Management Process that is structured to provide an agreed upon return on investment in order to support US National Interests**
    - **Return is defined as a set value to the operations community and is a non-mathematical relationship of performance, time-to-field, and impact to deployed forces**
    - **Value must be described and agreement reached on the investment to value ratio**
- **Means**
  - **An ability to have visibility <u>across</u> the Enterprise so as to allocate into portfolios**
    - **Complete knowledge and awareness of the enterprise**
    - **Rationale for individual portfolio allocation**
    - **Standard method to describe the components w/in the portfolio**
  - **An ability to characterize the portfolio's components**
    - **Attribute-based, i.e. Resource Sponsor, Prime-Contractor, Manning, Relative Priorities, etc.**
  - **An ability to understand the portfolio's internal dynamics**
    - **Interdependencies**
  - **An ability to manage the portfolio**
    - **Health metrics and tripwires for intervention**
    - **Risk-based decision making**
    - **Entry and Exit criteria**
  - **An ability to have trust in the data used to make decisions**
    - **Predictive/forecasting assessments**
    - **Execution data**
- **Ways**
  - **Portfolio-based management and organizational philosophy**
  - **Portfolio management tools**

# The Mindset

- **We mostly tend to look at performance program by program**
  - **We know the health of each tree**
- **Structuring Programs for Success**
  - **Requires we not only know the health of the trees**
  - **We need to look at the forest as well**

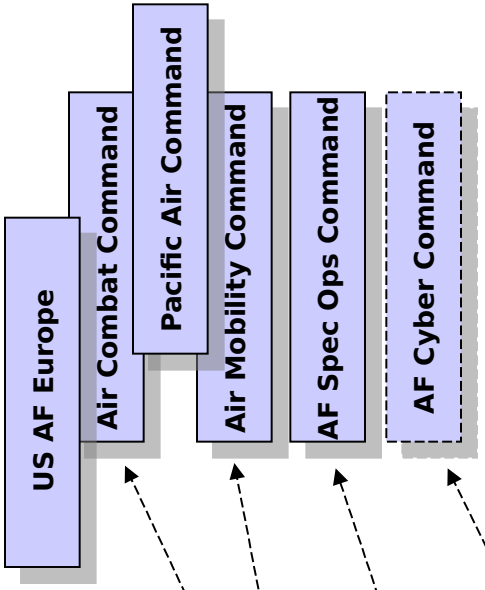
# AQ as a Mutual Fund Portfolio



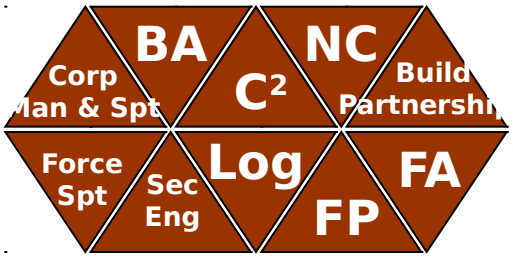

"Risk comes from not knowing what you are doing." Warren Buffet

# Defining the Portfolio

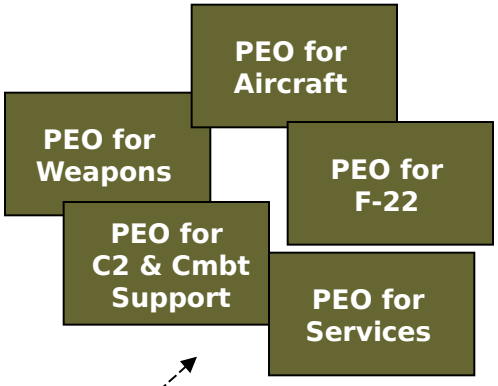
## Functional/Regional-Based



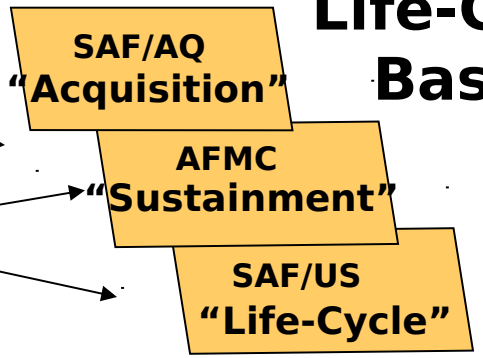

## Capability-Based



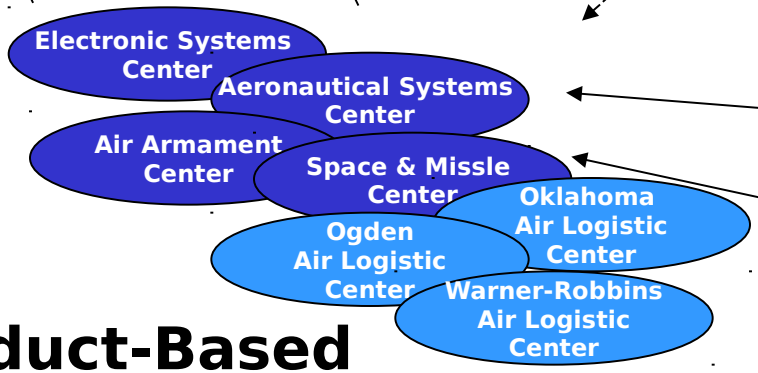

## Program-Based




## Life-Cycle Based

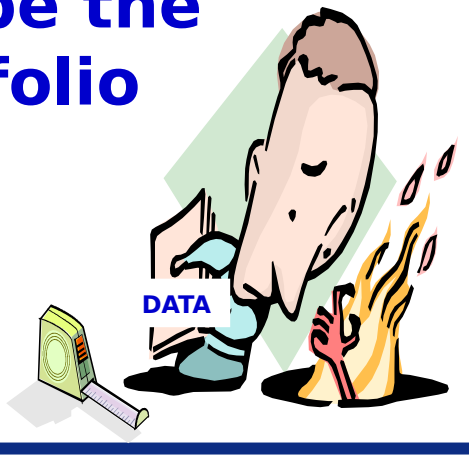



## Product-Based

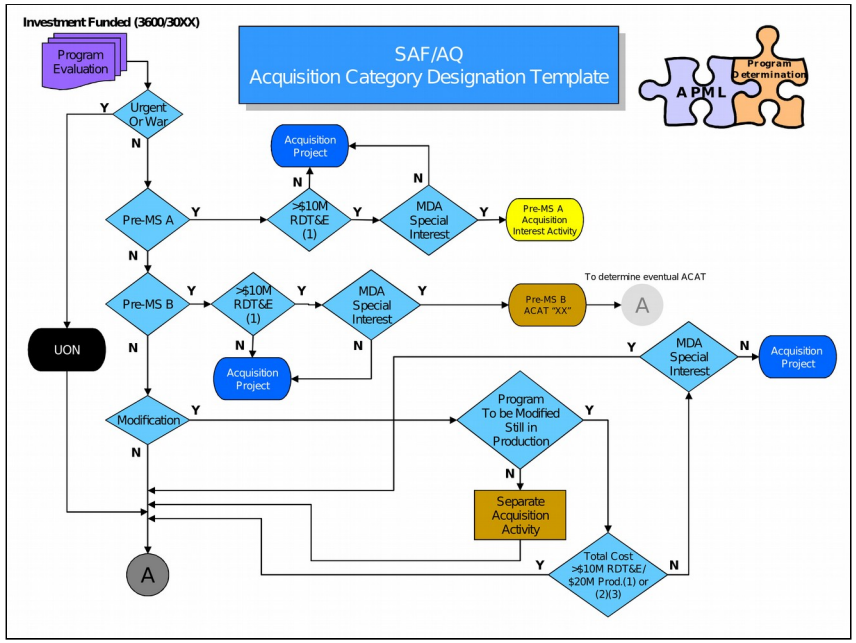


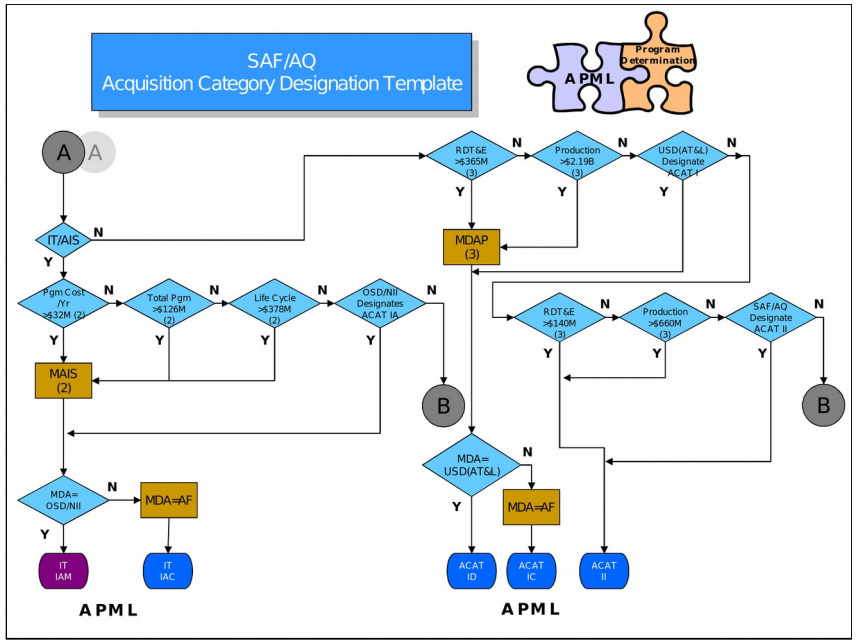
**An ability to have visibility <u>across</u> the Enterprise so as to allocate into portfolios**

**Standard method to describe the components w/in the portfolio**



# Defining the Components of the Portfolio

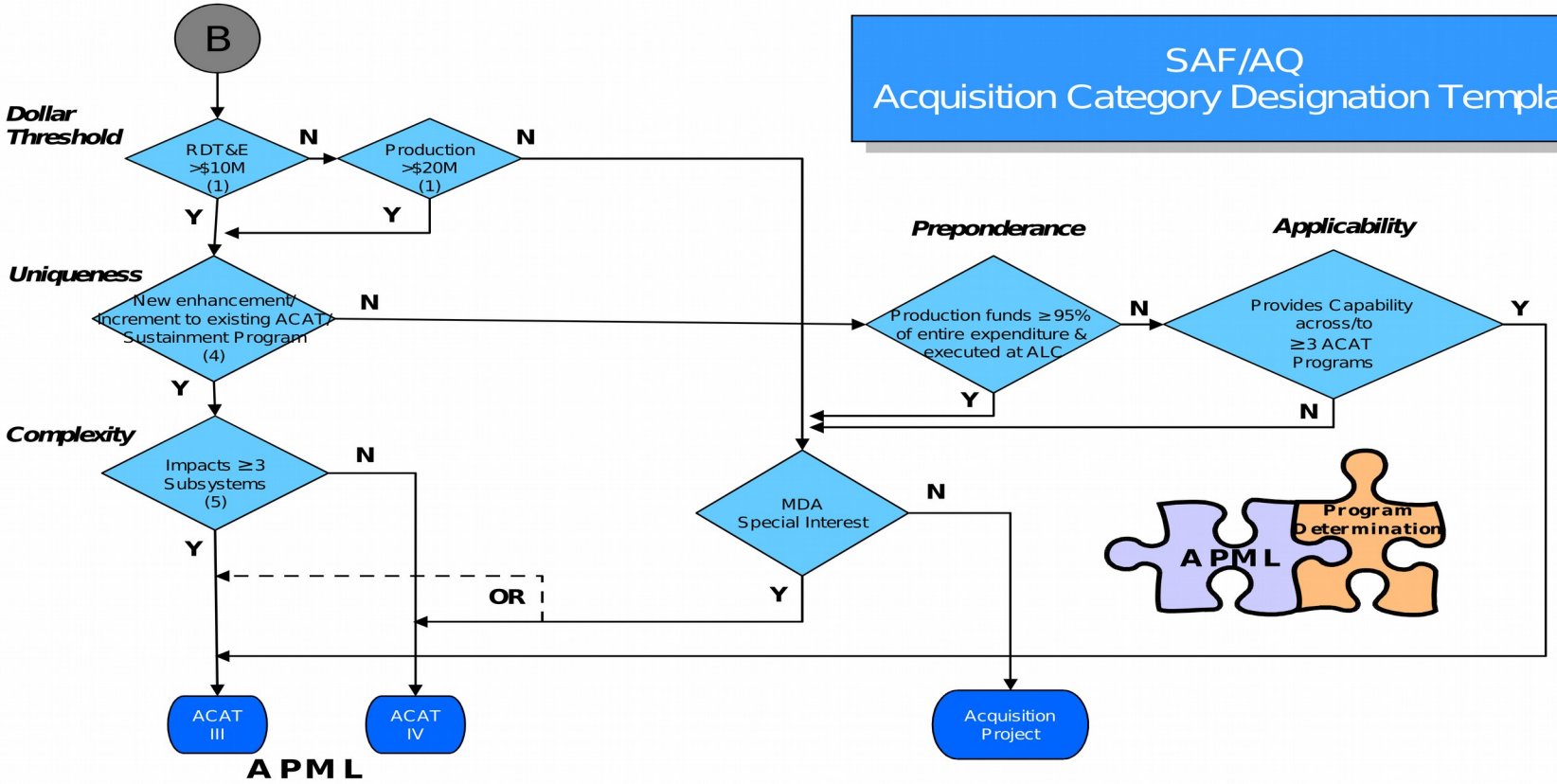



**Pre-MS A & B**

**ACAT I & II**

# Defining the Components of the Portfolio

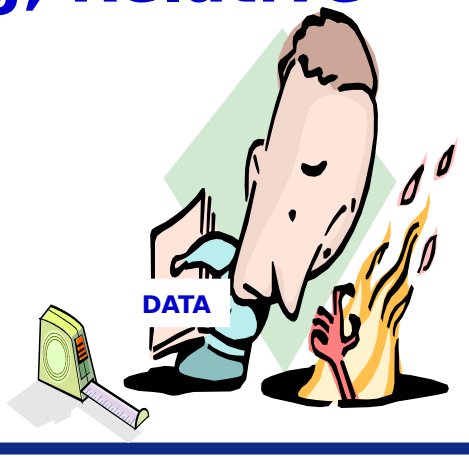



(1) Eventual Expenditures in FY 2007 Constant Dollars
(2) MAIS criteria is defined in DoD 5000.2, Enclosure 4. Eventual expenditures in FY 2000 constant dollars
(3) ACAT/MDAP criteria and cost are defined in DoD 5000.2. Enclosure 2, Table 1. Eventual expenditures in FY 2000 constant dollars
(4) "New enhancement/increment": Over and above original baselined capability
(5) "Subsystem": A grouping of items that perform a set of functions within a particular end product. (EIA-632, Annex A)

# An ability to characterize the portfolio's components

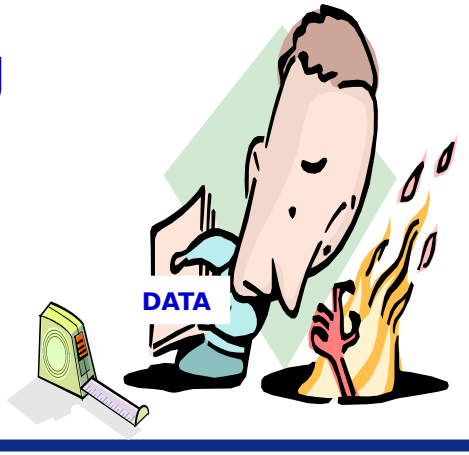
**Attribute-based, i.e. Resource Sponsor, Prime-Contractor, Manning, Relative Priorities, etc.**

**…and Interdependencies**



# An ability to manage the portfolio

- Health metrics and tripwires for intervention
- Risk-based decision making
- Entry and Exit criteria



# Our Current Methods: AF Product Center XX

- **Portfolio management tools include:**
  - **Weekly Execution Reviews (Quints/PoPS reviewed)**
  - **Acquisition Reporting (MARs/DAES/SARs)**
    - **Dep PEO monthly MAR/DAES review**
    - **Monthly MAR/PoPS metrics provided to AFPEO/AC**
  - **Bi-weekly Activity Reports**
  - **Annual Portfolio Review (includes PoPS assessment)**
  - **PWIDS, ASRs, EMAs, WSRs**
  - **Spring Program Review**

**But What is the PROCESS?**

# Our Current Methods: Metrics Mania

- **An orientation of the current Process Improvement metrics viewed by SAF/AQ**

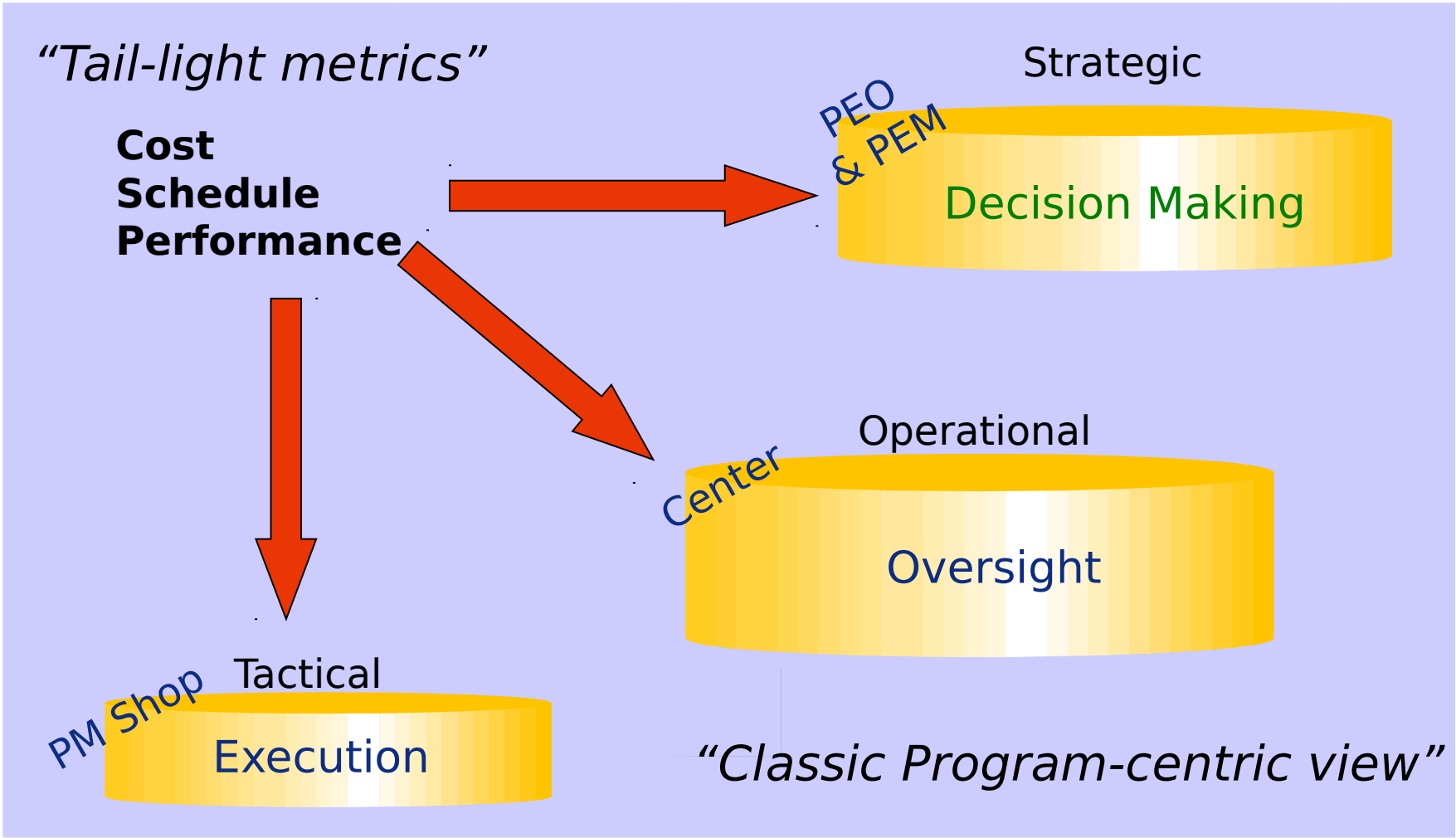
  - **95% Green by 2012 (1**
  - **CSAF Initiatives (4**
  - **AF Strategic Plan (16)**
  - **Bakers Dozen (36)**
  - **AFSO21 SECAF (10*) * – Assumes 1 Measure Per Initiative**
  - **DSWS Enterprise (6)**
  - **SAF/AQ Specific (6)**

- **Some targeted to improve program execution**
- **Some targeted to improve processess**
- **Some a hybrid of both**

**Lots of Metrics – Not all Strategic – Not All Aligned**

***(X) = Number of Associated Metrics (In Development or Implemented)***
***128 Total Metrics – Some degree of reuse present***

# Current Methods: Execution-Informed Decision Making



# Risk-Informed Decision Making: $64,000 Question

***How do we make good decisions before we need too?***

***or how do we use predictive and holistic Risk indicators to better characterize the health of the portfolio?***

AS REQUESTED, I DID A "RISK MANAGEMENT" ASSESSMENT.
I CONCLUDED THAT THERE WAS NO RISK OF ANY MANAGEMENT.
DO YOU HAVE ANYTHING TO ADD?
I'LL GET BACK TO YOU.
www.dilbert.com scottadams@aol.com
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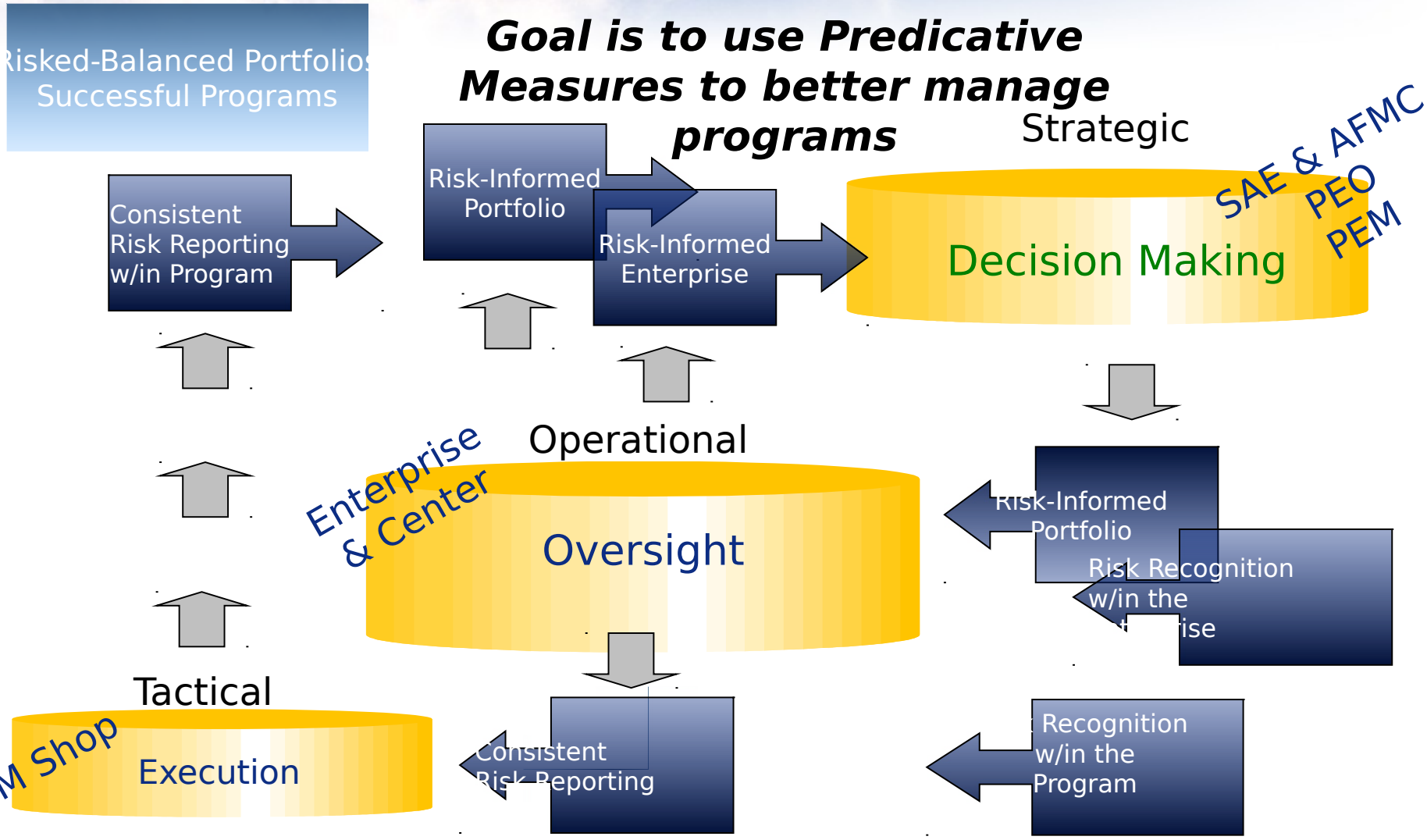
# Risk Based Decision Making Policy

- **Risk Based Decision Making Signed by Hon. Mrs Sue Payton and Hon. Dr. Ronald Sega 31 August 2007**
  - **Assess and manage risk of all kinds as a routine part of program management**
  - **Clearly identify risk at all levels during program reviews and use this risk information as a key element of program oversight and decision making**

**Requires programs to use the Probability of Program Success (PoPS) tool to assess and report program risk objectively and consistently.**

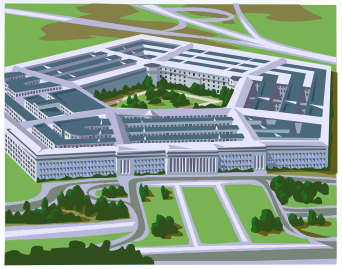
# Risk-Informed Future



# Probability of Program Success (PoPS)

- **Five top-level risk factors with sub-metrics**
  - **3 internal**
  - **2 external**
- **Internal risk factors**
  - **Program requirements**
  - **Program resources**
    - **Budget**
    - **Manning (both program office and contractor)**
    - **Contractor health**
  - **Program execution**
    - **EVM, CPAR**
    - **Technical maturity (TRL/TRA, MRA), testing, software**
    - **Program risk assessment, sustainability**

# PoPS Methodology (cont'd)

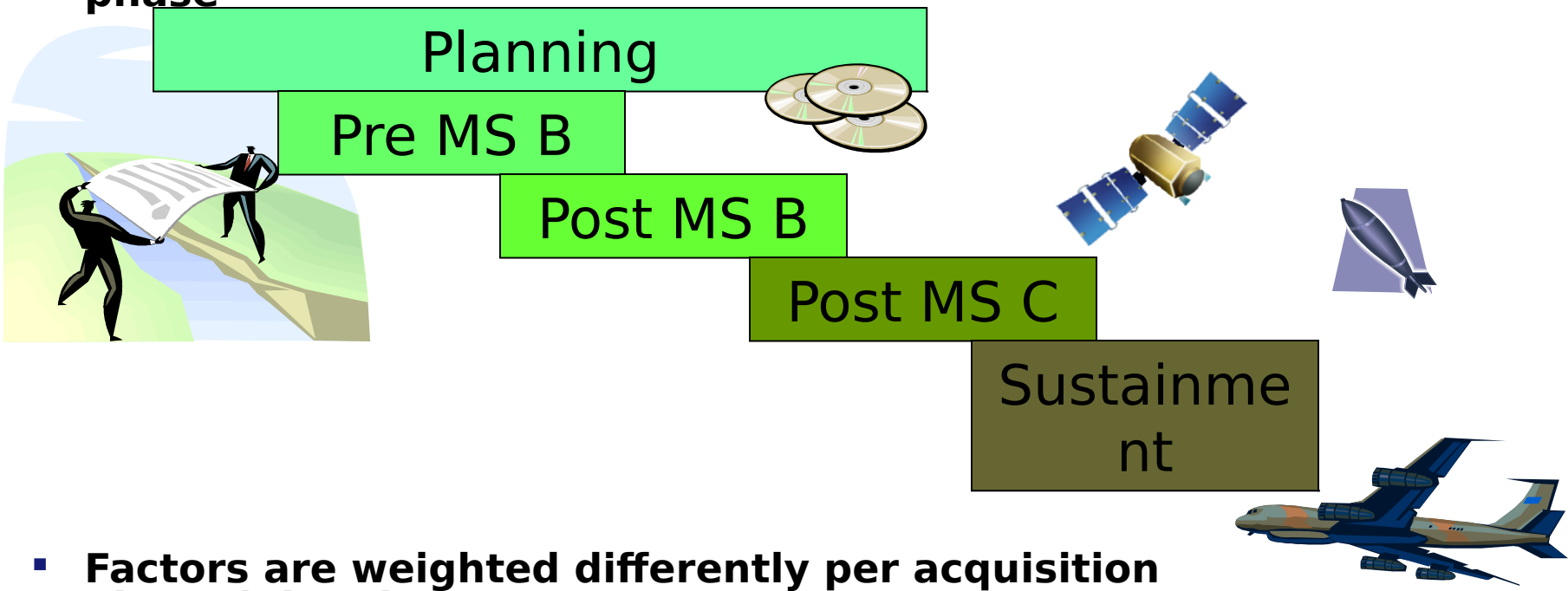


- **External Risk Factors**
  - **Program Fit in Capability Vision**
    - **AF Vision**
    - **DoD Vision**
  - **Stakeholder Advocacy**
    - **OSD**
    - **Joint Staff**
    - **Congress**
    - **Warfighter**
    - **Air Force**
    - **Industry**
    - **International**

- Assessment frequency: monthly or event triggered
  (Freq of data input PoPS Ops Guide Page 14)

# PoPS Methodology

- **Factors weighted differently per acquisition phase**




- **Factors are weighted differently per acquisition phase (Planning, Pre-MS B, Post-MS B, Post-MS C, Sustainment)**
- **Metrics are populated in Excel Spreadsheet**
- **All metrics and factors are rolled up in a single “windshield” chart for program display**

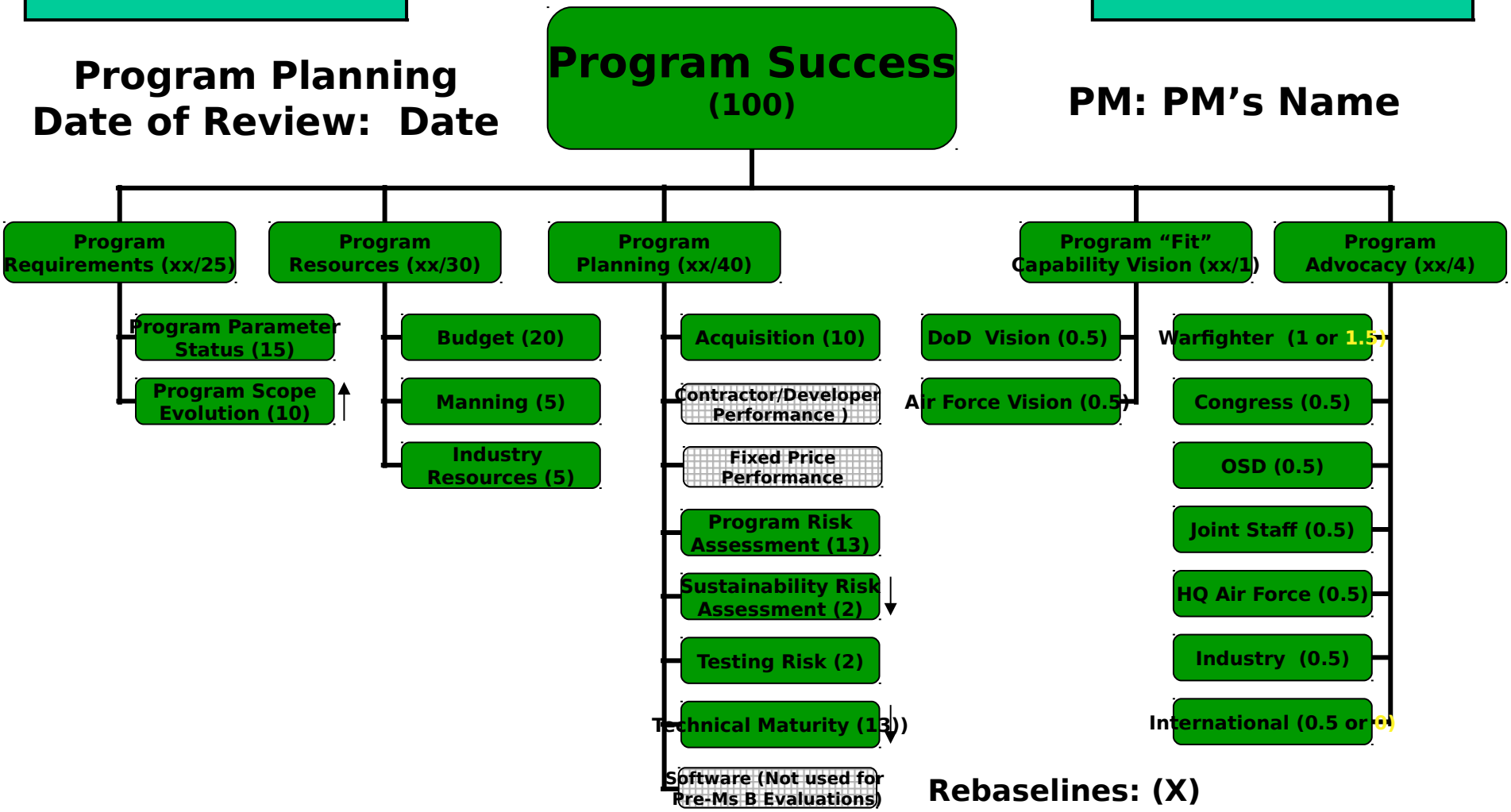
# Probability of Program Success Summary

**PEO:**

**Program Name**
**ACAT XX**

**Program Planning**
**Date of Review: Date**

**PM: PM's Name**




**Rebaselines: (X)**
**Last Rebaseline: DATE**
**Program Life Cycle Phase:**
**XXXXXXX**

# DEMO

# How to characterize the portfolio
## *What are we trying to maximize?*

**Not always straight forward…**

**Our goal is to provide "best value" for the investment…**

***Requires awareness and knowledge***

***Requires manageable chunks***

***Requires ability to divest and invest***

***Requires diversification***

***Requires understanding of "best value"***

# Making Sense of the Internal Dynamics: Metrics Mania

- An orientation of the current Process Improvement m[illegible]ed b[illegible] SAF/AQ

95% Green by 2012

On Time, On Cost

Reduced Cycle Time From Need to Delivery

Improved Availability at Reduced Cost

How do these contribute to Portfolio Management?

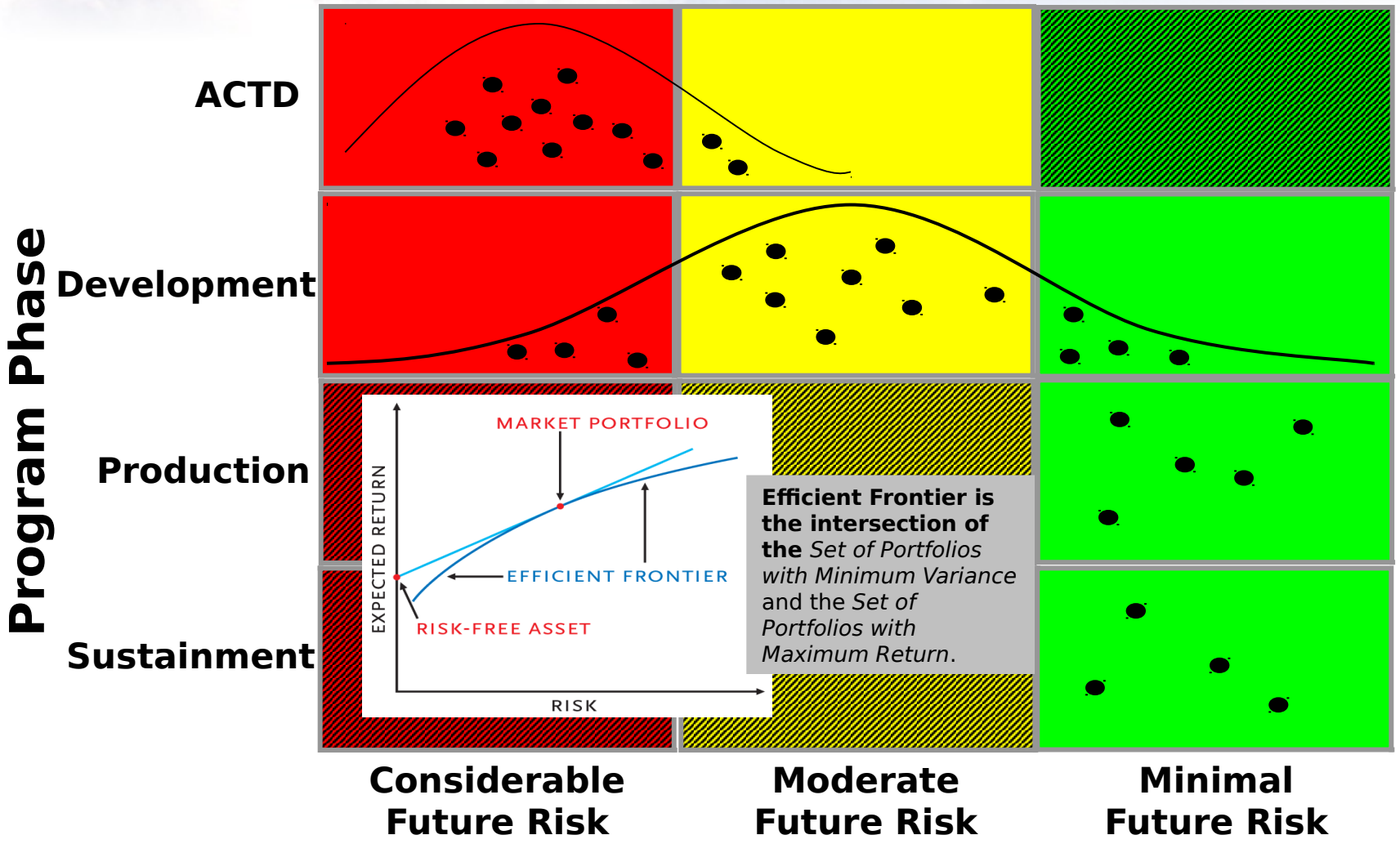
- Som[illegible]ove program
- [illegible] to improve
- [illegible] nybrid of both

- 95% Green by 2012
- CSAF Initiatives
- AF Strategic Pl[illegible]
- Bakers Do[illegible] (96)
- AFSO21 Initiati[illegible] (10*) * – Assumes 1 Measure Per
- D[illegible]se (6)
- [illegible]pecific
- [illegible] Sub process (49)

**Lots of Metrics – Not all Strategic – Not All Aligned**

*(X) = Number of Associated Metrics (In Development or Implemented)*
*128 Total Metrics – Some degree of reuse present*

# Characterizing the Portfolio
## *"Agreed upon Return"*



# Summary

- AF is moving to risk-based decision making
- Goal is to move to a risk-based portfolio-management philosophy
  - Primavera's Prosite will be critical enabler
- Developing metrics and tools for AF Portfolio management

***Uphill battle….but can't afford to fail***

# Back Up

# March 2008 Report, GAO Conclusions on DoD Acquisition

GAO found that:

- 63 percent of the programs had changed requirements once system development began, and also experienced significant program cost increases
- Average tenure to date for program managers has been less than half of that called for by DOD policy
- About 48 percent of DOD program office staff for programs GAO collected data from is composed of personnel outside of the government.
- Roughly half the programs that provided GAO data experienced more than a 25 percent increase in the expected lines of software code since starting their respective system development programs.